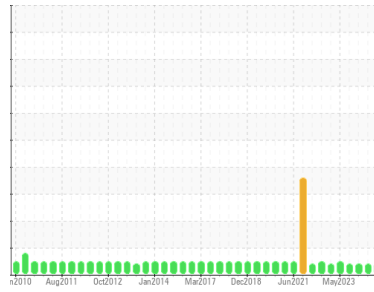




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

DECHARGEMENT

Machine Id
REDUCTEUR DE ROTATION DU BRISE-MOTTES (S/N 459-C8-176)

Component

Reduction Gear

Fluid

MOBIL MOBILGEAR SHC 220 (30 LTR)

DIAGNOSIS

Recommendation

Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il n'y a aucun indice de contamination dans l'huile.

Fluid Condition

La viscosité de l'échantillon se situe dans la portée de l'ISO 150; nous vous conseillons de vérifier. L'état de l'huile est acceptable pour la durée de service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0914868 | WC0841694 | WC0841670 |
| Sample Date | Client Info | | 27 Mar 2024 | 15 Oct 2023 | 30 Aug 2023 |
| Machine Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | ABNORMAL | ABNORMAL | ABNORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.1 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185(m) | >150 | 9 | 16 | 24 |
| Chromium | ppm | ASTM D5185(m) | >10 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >10 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) | >100 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >50 | <1 | 2 | 2 |
| Tin | ppm | ASTM D5185(m) | >10 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) | | <1 | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | <1 | 0 | 0 |
| Calcium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |
| Phosphorus | ppm | ASTM D5185(m) | | 382 | 314 | 346 |
| Zinc | ppm | ASTM D5185(m) | | 3 | 2 | 3 |
| Sulfur | ppm | ASTM D5185(m) | | 3865 | 6302 | 6711 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

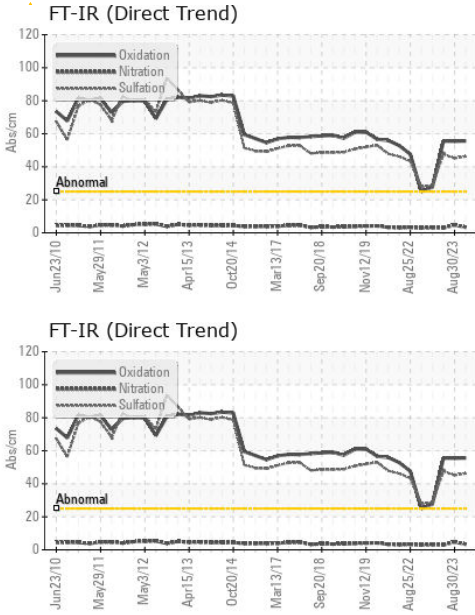
| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Silicon | ppm | ASTM D5185(m) | >50 | 20 | 16 | 18 |
| Sodium | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 0 | 0 |

INFRA-RED

| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | | 0 | --- | 0 |
| Nitration | Abs/cm | ASTM D7624* | | 3.3 | --- | 4.8 |
| Sulfation | Abs/.1mm | ASTM D7415* | | 46.2 | --- | 45.1 |

FLUID DEGRADATION

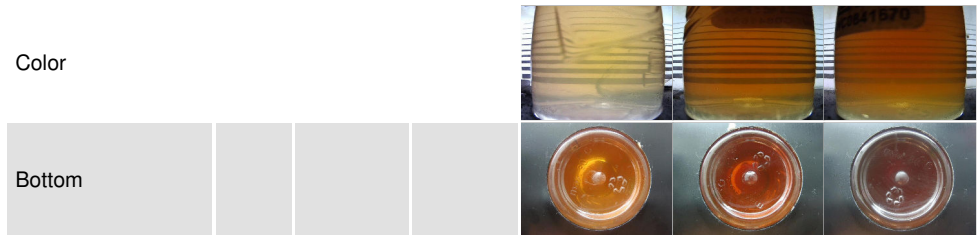
| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | | 55.6 | --- | 55.5 |



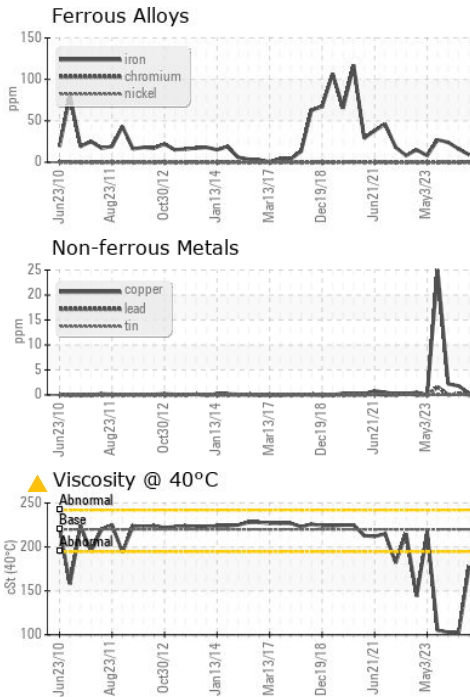
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | Visual* | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE |
| Precipitate | scalar | Visual* | NONE | NONE | NONE |
| Silt | scalar | Visual* | NONE | NONE | VLITE |
| Debris | scalar | Visual* | NONE | NONE | VLITE |
| Sand/Dirt | scalar | Visual* | NONE | VLITE | NONE |
| Appearance | scalar | Visual* | NORML | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.1 | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|-----------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 220 ▲ 178 | ▲ 102 | ▲ 103 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Rio Tinto - USINE VAUDREUIL BHB (Mill - Aluminum)**
Sample No. : WC0914868 **Received** : 08 Apr 2024 **1955 BD. MELLON, EDIFICE 401**
Lab Number : 02627508 **Tested** : 09 Apr 2024 **JONQUIERE, QC**
Unique Number : 5760640 **Diagnosed** : 09 Apr 2024 - Kevin Marson **CA G7S 4L2**
Test Package : IND 1 (Additional Tests: FT-IR) **Contact: Dany Bonneau**
dany.bonneau@riotinto.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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